

### **AMENDMENTS TO THE CLAIMS**

The following serves as a complete listing of the claims and replaces all prior claim listings:

#### **LISTING OF THE CLAIMS:**

Claim 1. (Currently Amended): An arachidonic acid-containing plant ~~produced by a process that comprises an arachidonic acid-producing step in which~~ comprising introduced fatty acid synthetase genes associated with the biosynthesis of arachidonic acid are introduced into a plant to produce arachidonic acid, wherein the fatty acid synthetases associated with the biosynthesis of arachidonic acid are  $\Delta 6$  desaturase, fatty-acid-chain elongase, or  $\Delta 5$  desaturase, and wherein the expression of a  $\Delta 15$  desaturase is suppressed in the plant.

Claims 2-5. (Canceled).

Claim 6. (Currently Amended): The arachidonic acid-containing plant as set forth in claim [[5]]1, wherein the  $\Delta 6$  desaturase is one of:

- (a) a protein consisting of an amino acid sequence of SEQ ID NO: 1; and
- (b) a protein, consisting of an amino acid sequence that has been modified by substitution, deletion, insertion, and/or addition of one or more amino acids of SEQ ID NO: 1, for catalyzing a reaction of introducing an unsaturated bond at position  $\Delta 6$  of an aliphatic monocarboxylic acid.

Claim 7. (Currently Amended): The arachidonic acid-containing plant as set forth in claim [[5]]1, wherein the gene encoding the  $\Delta 6$  desaturase is one of:

- (c) a gene having a base sequence of SEQ ID NO: 2 as an open reading frame; and
- (d) a gene that hybridizes under stringent conditions with a gene of a base sequence complementary to a base sequence of a gene identified by SEQ ID NO: 2, and that encodes a

protein which catalyzes a reaction of introducing an unsaturated bond at position  $\Delta 6$  of an aliphatic monocarboxylic acid.

Claim 8. (Currently Amended): The arachidonic acid-containing plant as set forth in claim [[5]]\_1, wherein the fatty-acid-chain elongase is one of:

- (e) a protein consisting of an amino acid sequence of SEQ ID NO: 3; and
- (f) a protein, consisting of an amino acid sequence that has been modified by substitution, deletion, insertion, and/or addition of one or more amino acids of SEQ ID NO: 3, for catalyzing a reaction of elongating a carbon chain of an aliphatic monocarboxylic acid.

Claim 9. (Currently Amended): The arachidonic acid-containing plant as set forth in claim [[5]]\_1, wherein the gene encoding the fatty-acid-chain elongase is one of:

- (g) a gene having a base sequence of SEQ ID NO: 4 as an open reading frame; and
- (h) a gene that hybridizes under stringent conditions with a gene of a base sequence complementary to a base sequence of a gene identified by SEQ ID NO: 4, and that encodes a protein which catalyzes a reaction of elongating a carbon chain an aliphatic monocarboxylic acid.

Claim 10. (Currently Amended): The arachidonic acid-containing plant as set forth in claim [[5]]\_1, wherein the  $\Delta 5$  desaturase is one of:

- (i) a protein consisting of an amino acid sequence of SEQ ID NO: 5; and
- (j) a protein, consisting of an amino acid sequence that has been modified by substitution, deletion, insertion, and/or addition of one or more amino acids of SEQ ID NO: 5, for catalyzing a reaction of introducing an unsaturated bond at position  $\Delta 5$  of an aliphatic monocarboxylic acid.

Claim 11. (Currently Amended): The arachidonic acid-containing plant as set forth in claim [[5]]\_1, wherein the gene encoding the  $\Delta 5$  desaturase is one of:

- (k) a gene having a base sequence of SEQ ID NO: 6 as an open reading frame; and

(l) a gene that hybridizes under stringent conditions with a gene of a base sequence complementary to a base sequence of a gene identified by SEQ ID NO: 6, and that encodes a protein which catalyzes a reaction of introducing an unsaturated bond at position  $\Delta 5$  of an aliphatic monocarboxylic acid.

Claim 12. (Previously Presented): The arachidonic acid-containing plant as set forth in claim 1, wherein the fatty acid synthetases associated with the biosynthesis of arachidonic acid, or the genes encoding the fatty acid synthetases are derived from *Mortierella*.

Claim 13. (Previously Presented): The arachidonic acid-containing plant as set forth in claim 1, wherein the fatty acid synthetases associated with the biosynthesis of arachidonic acid, or the genes encoding the fatty acid synthetases are derived from *Mortierella alpina*.

Claim 14. (Canceled).

Claim 15. (Currently Amended): The arachidonic acid-containing plant as set forth in claim 1, wherein, ~~in the expression suppressing step, the~~ expression of the  $\Delta 15$  desaturase is suppressed by an RNAi method.

Claim 16. (Currently Amended): The arachidonic acid-containing plant as set forth in claim 1, wherein the plant comprises a plant cell, a plant tissue, a plant callus, a plant seed, a grown plant individual, or offspring of ~~a plant individual having the same trait as the grown plant individual~~ the plant individual that contains arachidonic acid.

Claim 17. (Previously Presented): The arachidonic acid-containing plant as set forth in claim 1, wherein the plant comprises a soybean.

Claim 18. (Previously Presented): Arachidonic acid obtained from the arachidonic acid-containing plant of claim 1.

Claim 19. (Original): A composition which comprises the arachidonic acid of claim 18.

Claim 20. (Previously Presented): A food which comprises the composition of claim 19.

Claim 21. (Previously Presented): An arachidonic acid-containing plant preparation kit for preparing the arachidonic acid-containing plant of claim 1, comprising:

a recombinant expression vector including a promoter and genes encoding fatty acid synthetases associated with the biosynthesis of arachidonic acid.

Claim 22. (Original): The arachidonic acid-containing plant preparation kit as set forth in claim 21, further comprising a set of reagents for introducing the recombinant expression vector into a plant cell.